

PHASE I BOOK EXPLOITATION SOV/5521

Kobzev, V.V., and V.N. Shishmakov

Kaskady radiopriyemnikov na transistorakh (Cascades of Transistorized Radio Receivers)  
Moscow, Gosenergoizdat, 1960. 271 p. 17,000 copies printed.

Ed.: Ya.A. Fedotov; Tech. Ed.: G.Ye. Larionov.

**PURPOSE:** This book is intended for technical personnel engaged in the development of radio receiving equipment. It may also be useful to students of radio engineering in schools of higher and secondary education.

**COVERAGE:** The book presents the basic principles of the design and calculation of cascades in transistorized radio receivers. Physical processes occurring in semiconductor devices and the basic relationships of semiconductor parameters to operating conditions, temperature, and frequency are briefly described. The authors thank N.I. Chistyakov, Professor, Doctor of Technical Sciences, and Ya.A. Fedotov, Candidate of Technical Sciences, for their advice. There are 66 references: 45 Soviet (including 13 translations), 20 English, and 1 French.

Card 1/6

KOBZEV, Y.Y.

Voltage amplification by the use of Hall elements.  
Elektrosvias' 14 no.3:9-16 Nr '60. (MIRA 13:6)  
(Radio amplifiers)

KOBZEV, V.V.; SHISHMAKOV, V.N.; FIEDOTOV, Ya.A., kand.tekhn.nauk, red.;  
LARIONOV, G.Ye., tekhn.red.

[Transistorised radio receiver stages] Kaskady radiopriemnikov  
na transistorakh. Moskva, Gos.energ.isd-vo, 1960. 271 p.  
(MIRA 13:12)

(Transistor circuits) (Transistor radios)

9.4370

26209  
S/106/60/000/003/001/003  
A055/A133

AUTHOR: Kobzev, V.V.

TITLE: Voltage multiplication with the aid of Hall data units

PERIODICAL: Elektrosvyaz, no. 3, 1960, 9 - 16

TEXT: The author discusses some experimental results allowing to estimate the possibilities and the peculiar features of voltage multiplication devices using the Hall effect. These devices are called Hall data units in the article. Several Hall data units were examined, and, in particular, those in n-type germanium and in InSb alloy. Only the n-type germanium units - which proved superior and more practical - are discussed in the article. Compensation of non-equipotentiality: The best method for compensating non-equipotentiality (which is the main defect of the Hall data units) was found to be the method illustrated in Figure 2d. With this method it was practically possible to obtain, in all data units, a non-equipotentiality voltage not exceeding 50 microvolts at a maximum input voltage frequency of 3,000 cycles with 2 volts (active magnitude) in a field of 1,000 oe. [By non-equipotentiality voltage, the author understands the part of the input voltage transmitted to the output, in the absence of the field, on

Card 1/3

26209

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A055/A133

Voltage multiplication with the aid of Hall data units

account of the non-symmetry of the electrodes.] Only data units with 4 electrodes were tested by the author, those with 5 electrodes having been found less advantageous. Choice of the magnetic system: A magnetic circuit with an air gap was used, the data unit being placed in the gap. The gap could not be made smaller than 0.05 cm, owing to the thickness of the data units (0.04 to 0.05 cm). The most convenient core-section in the gap is  $S = (0.9 + 1.2) \cdot (0.5 + 0.7) \text{ cm}^2$ . The best magnetic material was found to be electrical sheets ( $\mu = 1,000$ ). Results and conclusions: The examination of the performance of Hall data units used for multiplying currents at different frequencies was carried out at room temperature. The low-frequency current (26 cps) was introduced into the magnetization winding, and the other current (100 - 3,000 cycles) directly into the data unit. The input voltage was 34 millivolts. For a field of about 1,000 oe, taking into account the dissipated power, it was possible to obtain an output voltage of 60 - 70 millivolts, the required magnetization power being here 150 millivoltamperes. If the magnetization power is brought to 400 millivoltamperes, and the input voltage to 4 volts, it is possible to obtain at the output a voltage exceeding 100 millivolts. The overall non-linear distortion (included that due to the measuring device) was found not to exceed 1 - 2% when direct current is applied to the data unit and alternating current to the magnetization circuit, and

Card 2/3

Voltage multiplication with the aid of Hall data units

26209  
S/106/60/006/003/001/003  
A055/A133

to be considerably below 1% when direct current is applied to the magnetization circuit and alternating current to the unit input. The main distortion is, therefore, due to the non-linearity of the magnetization curve. As to the frequency response, the output voltage remains practically constant when the input voltage frequency varies from 100 cps to 20 kc; it is also practically independent of the magnetization frequency (within 0 to 150 cycles), if the magnetization current is kept constant. Finally, if the temperature changes from +20 to +50°C, the output voltage decreases, and the non-equipotentiality voltage increases. In his conclusion the author states that the use of Hall data units for linear multiplication of two voltages is a practical and adequate possibility. The best results are obtained when the low-frequency signal is applied to the magnetization circuit, and the higher-frequency signal to the input circuit of the data unit. There are 11 figures, 2 tables and 6 Soviet-bloc references.

SUBMITTED: November 5, 1959

Figure 2d: (1)  $U_{input}$ ; (2)  $U_{output}$



Card 3/3

FRUSLIN, Zalman Mendeleovich; KOBZEV, V.V., otv.red.

[Electron emission and electron-tube cathodes] Elektronnaia  
emissia i katody elektronnykh lamp; uchebnoe posobie po kursu  
"Elektronnye i poluprovodnikovye pribory." Moskva, Vses.  
sachnyi elektrotekh.in-t svyazi, 1961. 56 p.

(MIRA 15:5)

(Electron tubes) (Semiconductors)

SHAPIRO, David Naumovich; KOBZEV, V.V., otv. red.; VEYTSMAN, G.I.,  
red.; SHEPHER, G.I., tekhn. red.

[Principles of the theory and design of high-frequency  
transistor amplifiers] Osnovy teorii i rascheta usilitelei  
vysokoi chastoty na transistorakh. Moskva, Sviaz'isdat,  
1962. 279 p. (MIRA 15:11)  
(Transistor amplifiers)



SAVENKO, Vladimir Grigor'yevich; KOBZEY, V.V., otv. red.; VEYTSMAN,  
G.I., red.; TRISHINA, L.A., tekhn. red.

[Application of the Hall effect in telecommunication] Pri-  
menenie effekta Kholla v tekhnike svyazi. Moskva, Svyaz'-  
izdat, 1963. 112 p. (MIRA 16:11)  
(Transducers) (Hall effect)

KOBZEV, V.V.; ZAN'KO, A.A.

Quantitative determination of sodium and potassium chlorides in  
their mixtures by the extraction method. Ukr.khim.zhur. 29  
no.6:627-631 '63. (MIRA 16:9)

1. L'vovskiy politekhnicheskii institut.  
(Alkali metal chlorides)  
(Chemistry, Analytical—Quantitative)

KOBZEV, V.Y.; MILINKIS, B.M.; YEMEL'IANOV, R.G.; VEYTSMAN, G.I.,  
red.

[Use of lasers for communication purposes] Primenenie  
opticheskikh kvantovykh generatorov dlia tselei svyazi.  
Moskva, Svyaz', 1965. 119 p. (MIRA 18:12)

L 25650-66 FBD/EWT(1)/EEO(h)-2/T/EWP(h)/EWA(h) IJP(c) 73

ACC NR: AM6015021

Monograph

UR/

Kobzev, V. V.; Milinkis, B. M.; YEmel'yanov, R. G.

72

B+1

Laser applications in communications<sup>15</sup> (Primeneniye opticheskikh kvantovykh generatorov dlya tseley svyazi) Moscow, Izd-vo "Svyaz", 1965. 119 p. illus., biblio. 10,000 copies printed. (At head of title: Ministerstvo svyazi Soyuz SSSR. Tekhnicheskoye upravleniye) Series note: Lektsii po tekhnike svyazi

TOPIC TAGS: laser, laser application, laser design, radiation, communication system, quantum generator

PURPOSE AND COVERAGE: This book is intended for radio and communication specialists and students of schools of higher education and tekhnikums concerned with the operation of lasers and their application to the field of communication. The authors made an attempt to summarize information on lasers and to explain the possibility of using lasers in communication.

TABLE OF CONTENTS:

Foreword -- 3

Introduction [Kobzev] -- 4

Card 1/3

2

L 25650-66

ACC NR: AM6015021

1. Principle of the work and the design of a laser [Milinkis] -- 6

Quantum systems -- 6

Interaction of the radiation and substance -- 12

Lasers with solid and liquid substances -- 16

Gas lasers -- 20

Semiconductor lasers -- 25

Trends in new developments -- 28

References -- 33

2. Methods of modulation of laser radiation [Yemelyanov] -- 35

Principal physical effects used for modulation of the light -- 35

Amplitude of light modulation -- 41

Frequency of light modulation -- 49

Phase modulation of light -- 56

Polarization of light modulation -- 60

References -- 65

3. Principal types of photodetectors [Yemelyanov and Kobzev] -- 66

Basic parameters of photodetectors -- 66

Card 2/3

L 25650-66

ACC NR. AM6015021

Photodetectors based on external photoeffect -- 69  
Photodetectors based on internal photoeffect -- 74  
References -- 78

4. Radiocommunication systems with lasers [Kobzev] 79

Specific features and theoretical possibilities of communication  
lines with lasers -- 79  
Principles of building communication systems with lasers -- 90  
Practical achievement and developments carried out in the field of  
communication lines with lasers -- 107  
References -- 119

SUB CODE: 20/ SUBM DATE: 22Sep65/ ORIG REF: 042/ OTH REF: 060.

Card 3/3 FV

KASHURICHKIV, A.P.; KOVYAZINA, L.A.; KOBZEV, Yu.N.

Thermal treatment of Ekibastus coal with the purpose of utilizing it as fuel and as a source of chemicals. Khim.i tekhn.topl.i masel 6 no.1:42-48 Ja '61. (MIRA 14:1)

1. Institut goryuchikh iskopayemykh AN SSSR.  
(Coal gasification) (Fuel)

KORZEV, Yu.N.; CHUKHAROV, Z.P.

Use of natural gas for combined technological and power generation  
processes and development of the methodology for studying its  
high-speed pyrolysis. Izpol'. tverd. topl., ser. maz. i gaz  
no. 5:172-177 '64. (MIRA 19:2)



Кобзева А.А. и Винogradova Н.И.

KOBZEVA A.A. AND VINOGRADOVA N.I.

4074. Kobzeva A.A. and Vinogradova N.I. The iodine reaction of glycogen under various functional states of the animals Doklady Akad. Nauk. S.S.S.R. 1950, 73 (982-986)

Examination of glycogen isolated from frog muscle after strychnine-induced convulsions, as well as following a 3-day recuperation period, showed that while the absorption curve of I compound with normal glycogen has a max. at 5000 a., absorption max. 4300 a., and apparently gives no compounds with iodine. The glycogen isolated from convulsion-exhausted muscle has a higher max. absorption (same frequency) than the normal specimen, apparently owing to lesser branching, and its cleavage by amylase reaches but 24 o/o with the product giving an I complex with absorption max.  $\pm$  5000 a., indication that the side-chain length is unaffected by the convulsions, although the number of glucose residues as side chains is small. The glycogen from rested muscle gives values intermediate between the above 2 specimens, with indication of at least partial restoration of the normal amount of branching; the absorption max. is diffuse: 4700-5000 a. Thus the 5000 a. max. is characteristic of frog muscle glycogen and only its extinction coefficient varies with the condition of the animal. The I-treated liver glycogen (frog) normally gives  $\pm$  4300 a. max., indication a side-chain length of under 6 glucose units; its atroglycogen has no side chains and gives some absorption max. but

(Con't)

KOPZEEVA A.A. VINOGRADOVA N.I.

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lesser extinction coefficient. Animals treated after convulsions yield a glycogen with max. at 4400-4700 m $\mu$ , indicating that side chains are longer than normal and that the decrease of liver glycogen noted in convulsions is due only to the external side chain loss.  
Kosolajoff - (Chem. Abstr.)

*Lab. Physiol. Chem.*

PETROVA, A.M.; BOLOTINA, T.T.; ~~KORZYA~~, A.A.

Investigation of the processes of synthesis and hydrolysis of starch  
in potato tubers at various periods of vegetation. Biokhimiya 18,  
47-50 '53. (MLRA 6:1)  
(CA 47 no.15:7606 '53)

1. Lab. Physiol. Chem., Acad. Sci. U.S.S.R., Moscow.

KOBNEVA, A.A.

(U)  
The processes of organic synthesis and splitting of starch  
in potato tubers at different temperatures. A. N. Prigoda,  
T. T. Holotina, and A. A. Kobneva (Lab. Physiol. Chem.,  
Acad. Sci. U.S.S.R., Moscow). *Nikhimiya* 19, 617  
(1964); cf. *C.A.* 47, 7639f. — Potato tubers, variety Luth,  
at different temps. have a different content of starch and  
reducing substances. The starch-splitting properties of  
tubers kept at higher temps. are not as great as when  
stored at lower temps. The synthetic and phosphoglucosyl-  
lase activities do not seem to differ. B. S. Levine

Kahzova M

Pyridine nucleotides of liver and muscle of rabbits and their enzymatic degradation during alloxan diabetes. B. L. Kamenfeld and A. A. Kozhova. *Problemy Fiziologii i Gerontologii*, 2, No. 12, 89-92 (1964).--After alloxan treatment the content of oxidized pyridine nucleotides (DPN) of liver is increased by 0-40%, that in the muscle remains unaltered. Degradation of DPN in both of these tissues of diabetic rabbits is slow. Muscles of normal and diabetic rabbits showed no difference in the rate of DPN.

3

LABORATORY Physiol. Chemistry, AS USSR

PETROVA, A.N.; BOLOTINA, T.T.; KOBZEVA, I.A.,

Study of the active forms of amylose isomerase. *Biokhimiia*  
26 no.6:1001-1007 N-D '61. (MIRA 15:6)

1. Institute of Biochemistry, Academy of Sciences of the  
U.S.S.R.

(AMYLOSES)

REZNIKOV, I.G.; KONONOVA, T.V.; KOBZEVA, L.A.; LOYKO, V.A.

Obtaining fatty acid esters in the manufacture of alkylol amides.  
Trudy NIISZHIMSa no.3:15-19 '62. (MIRA 16:12)

REZNIKOV, I.G.; KOBZEVA, L.A.

Application of potentiometric titration in the control of alkylol  
amide production. Trudy NIISZHINsa no.3:19-23 '62. (MIRA 16:12)



SOLOVEY, D.Ya., kand.khimicheskikh nauk; Prinsipali uchastiye:  
ROGACHEVA, O.I., inzh.; TELEGINA, V.V., inzh.; KOBZEVA, L.I.,  
tekhnik; BLIOKH, M.B., laborant; YUSOVA, V.I., laborant

Corrosion resistance of reinforcement in silica concrete.  
Stroi.mat. 8 no.1:7-10 Ja '62. (MIRA 15:5)  
(Concrete reinforcement—Corrosion)

SOLOVEY, D.Ya., kand.tekhn.nauk; Prinimali uchastiyet KOBZEVA, L.I.,  
tekhnik; YUSOVA, V.I., laborant; BLIOKH, M.B., laborant

Protecting the reinforcement from corrosion in autoclaved silicate  
concretes. Sbor. trud. ROSSIMS no.20:84-89 '61. (MIRA 16:1)  
(Concrete reinforcement—Corrosion)

ONISHCHENKO, T.Ye.; KOBZEVA, M.G.

Effectiveness of vaccine therapy in whooping cough with a study  
of the phagocyte index. *Pediatrics* no.2:39-43 '62. (MIRA 15:3)

1. Iz kafedry infektsionnykh bolezney detskogo vozrasta (sav. -  
detsent N.G. Stepina) Odesskogo meditsinskogo instituta N.I.  
Pirogova (dir. - zaslushennyi deyatel' nauki prof. I.Ya. Deynaka).  
(WHOOPIING COUGH--PREVENTIVE INNOCULATION) (PHAGOCYTOSIS)

YAKIMENKO, T.M. [Iakymenko, T.M.]; KOBZEVA, M.G. [Kobsieva, M.H.]

Combined hemolytic action of *Proteus* hemotoxins and some  
representatives of the microflora of the intestines. Mikrobiol.  
zhur. 27 no.5:63-67 '65. (MIRA 18:10)

1. Odesskiy meditsinskiy institut im. Pirogova.

KOBZEVA, I.

KOBZEVA, P.

4697 Kushpeleva, M. i Kobzeva, P. Na kolkhosnoy svinoferme. (Kol-  
khoz im. Voroshilova, Yashkinskogo rayona). Kamrovo, kn. IZO., 1954.  
636.4.083st (57.15)

SO: Letopis' Zhurnal'nykh Statey, Vol 7, 1949

LEZHNEV, N.N.; TEREHT'YEV, A.P.; NOVIKOVA, I.S.; KOBZEVA, T.A.

Using the bromination method for the testing of carbon black. Kauch.  
i res. 24 no.9:16-20 '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i  
Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.

S/138/61/000/011/005/007  
A051/A126

AUTHORS: Lozhnev, N. N., Terent'yev, A. P., Novikova, I. S., Kobzeva, T. A.

TITLE: The chemical nature of the surface of carbon black

PERIODICAL: Kauchuk i rezina, no. 11, 1961, 21 - 27

TEXT: The authors have developed a new method for the quantitative determination of certain oxygen functional groups present in carbon black, and have tested the validity of methods previously used. A rapid and accurate method for the determination of active hydrogen in carbon blacks, using an ether solution of the Grignard reagent, was also developed, in addition to a method for the alkalimetric titration of the acidic groups of the carbon blacks with caustic soda and sodium carbonate. By assuming that the caustic soda reacts with all the acidic groups and the sodium carbonate only with the carboxylic ones, the phenol and carboxylic groups in the carbon blacks were determined. The general nitrogen in the carbon black was determined by the Kjeldahl method. The latter is a variation of the method introduced by A. P. Terent'yev and B. M. Luskiniy. Combustion can be carried out in 4 hours, and chromic acid is used as the oxidation catalyst. Conclusions are drawn on the nature of the oxygen bound with certain carbon blacks

Card-1/3

The chemical nature of the surface of carbon black

S/138/61/000/011/005/007  
A051/A126

from the developed methods and by comparing the obtained results with data of other non-Soviet authors, and data of carbon black investigation using the paramagnetic electron resonance method. However, a large portion of the oxygen in the channel black has not been identified. The most complete identification of oxygen was made for that bound with experimental carbon black of the XAΦ (KhAF) type. Data of the channel black analysis, both of the initial and of that containing chemically adsorbed neosone D (D), Φ 2 HA (P2NA) and also captax MBT (MBT) led to the assumption that these substances react with oxygen-containing radicals of carbon black at the position of the weakest-bound hydrogen atom (RW-H and RS-H). It is pointed out that carbon black chemically interacts with various ingredients of rubber and probably with raw rubber or polymer radicals. Thus, the following are thought to be chemically active: 1) various oxygen-containing groups, 2) sulfur-containing compounds - in the case of carbon blacks, produced on the basis of petroleum and coal, 3) free radicals on the surface - non-coupled electrons of atoms of carbon and oxygen and possibly atoms of sulfur and nitrogen, bound by chemical bonds with carbon atoms of the carbon black crystalline lattice. The sulfur-containing groups are thought to have the structure  $>C=S$  and  $\rightarrow C-SH$ . The active hydrogen is thought to be in the groups  $-C(=O)-H$  and  $\rightarrow C-O-H$ . Re-

Card 2/3



KOBZEVA, T. N. Cand Med Sci -- (diss) "Mud therapy for patients with  
gynecological inflammations in the subacute stage." Mos, 1958. 15 pp  
(Min of Health RSFSR. State Sci Res Inst of Health Resort <sup>Studies</sup> and  
Physiotherapy), 250 copies (KL, 52-58, 107)

-178-

KOBENVA, T.M.

Mud therapy in subacute gynecological inflammatory diseases [with summary in English]. Akush. i gin. 34 no.2:64-70 Mr-Apr '58. (MIRA 11:5)

1. Iz ginekologicheskogo otdeleniya (sav. -prof. V. G. Dik)  
TSentral'nogo instituta kurortologii (dir.-kand.med. nauk  
G.M. Pospelova).

(GYNECOLOGICAL DISEASES, ther.

mud ther. in subacute inflammatory dis (Rus))

(MUD THERAPY, in various dis.

subacute inflammatory gyn. dis. (Rus))

KOSZBYA, Y.I.

Dispensary services for glaucoma. Vest. oft. 33 no.6:18-22 N-D '54.  
(MIRA 8:1)

1. Is glaznoy kliniki (dir. prof. O.A.Dudinov) Kirgizskogo meditsinskogo instituta.  
(GLAUCOMA, therapy,  
dispensary technic)

KOBZEVA, V. I.

"Pharmacological Properties of Furammon and Its Clinical Importance in  
Glaucoma Therapy (Clinical Experimental Investigations)." Cand Med Sci.  
Kirgiz State Medical Inst, Frunze, 1955. (KL, No 16, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations  
Defended at USSR Higher Educational Institutions (16).

KOBZEVA, V. I.

Kobzeva, V. I.

Abstract of a dissertation submitted toward the academic degree of Candidate in Medical Sciences by V. I. Kobzeva on "The pharmacological properties of furamon and its clinical significance in the therapy of glaucoma (clinical-experimental investigation)." Rostov State Medical Inst. Rostov na Donu, 1956. (Dissertation for the Degree of Candidate in Technical Science.)

Knishnaya letopis'  
No. 15, 1956. Moscow.

KOBZEVA, V.I.

Diathermocoagulation of the sclera in glaucoma. Vest. oft. 74  
no. 1:21-23 '61. (MIRA 14:3)  
(GLAUCOMA) (ELECTROSURGERY)

BORSKAYA, Ye.A.; KOBZEVA, Z.A.; KISELEVA, M.S.

New rod fastenings. Avt.prom. 29 no.3:46 Mr '63. (MIRA 16:3) 11

1. Nauchno-issledovatel'skiy tekhnologicheskiy institut avtomobil'noy  
promyshlennosti.

(Fastenings)

KOBZHUV, S.M. (Sevastopol')

Determination of saccharose fermentation and the phenomenon of phagolysis  
of dysentery bacteria on solid and in liquid media in a single test. Lab.  
delo no.1:52-53 '64. (MIRA 17:4)



KOBCHUV, S.M.

Experience with Rahaninov's method for restoring agglutinability of  
nonagglutinating dysentery cultures. Zhur. mikrobiol. epid. i immu.  
41 no.3:141 Mar '64. (MIRA 17:11)

RZEPECKI, Wit; KOBZIK, Jan

Bilateral pulmonary resection. Postepy hig. med. dowv. no.2:180-181  
'60.

1. Z Zakladu Ftysjochirurgii S.D.L. Sanatorium im. dra O. Sokolowskiego  
w Zakopanem Kierownik: prof. dr Wit Rzepecki.

(PNEUMONECTOMY)

MLEKODAJ, Stanislaw; KOBZIK, Josef

Simultaneous thoracoplasty after partial pulmonary resection in lung tuberculosis. Postępy hig. med. dow. no.2:194-196 '60.

1. z Zakładu Fizjochirurgii S.D.L. Sanatorium im. dra O. Sokolowskiego w Zakopanem Kierownik: prof. dr Wit Raspecki.

(THORACOPLASTY) (PNEUMONECTOMY)

KOBZIK-GRONDECKA, Wlodek

Use of Neptazane in glaucoma. Klin. oczna 32 no.4:377-380 '62.

1. Z Kliniki Okulistycznej Slaskiej AM w Zabrzu. Kierownik: prof. dr  
med. M. Madroszkiewicz.  
(GLAUCOMA) (ACETAZOLAMIDE)

KOBZIKOV, I. /.

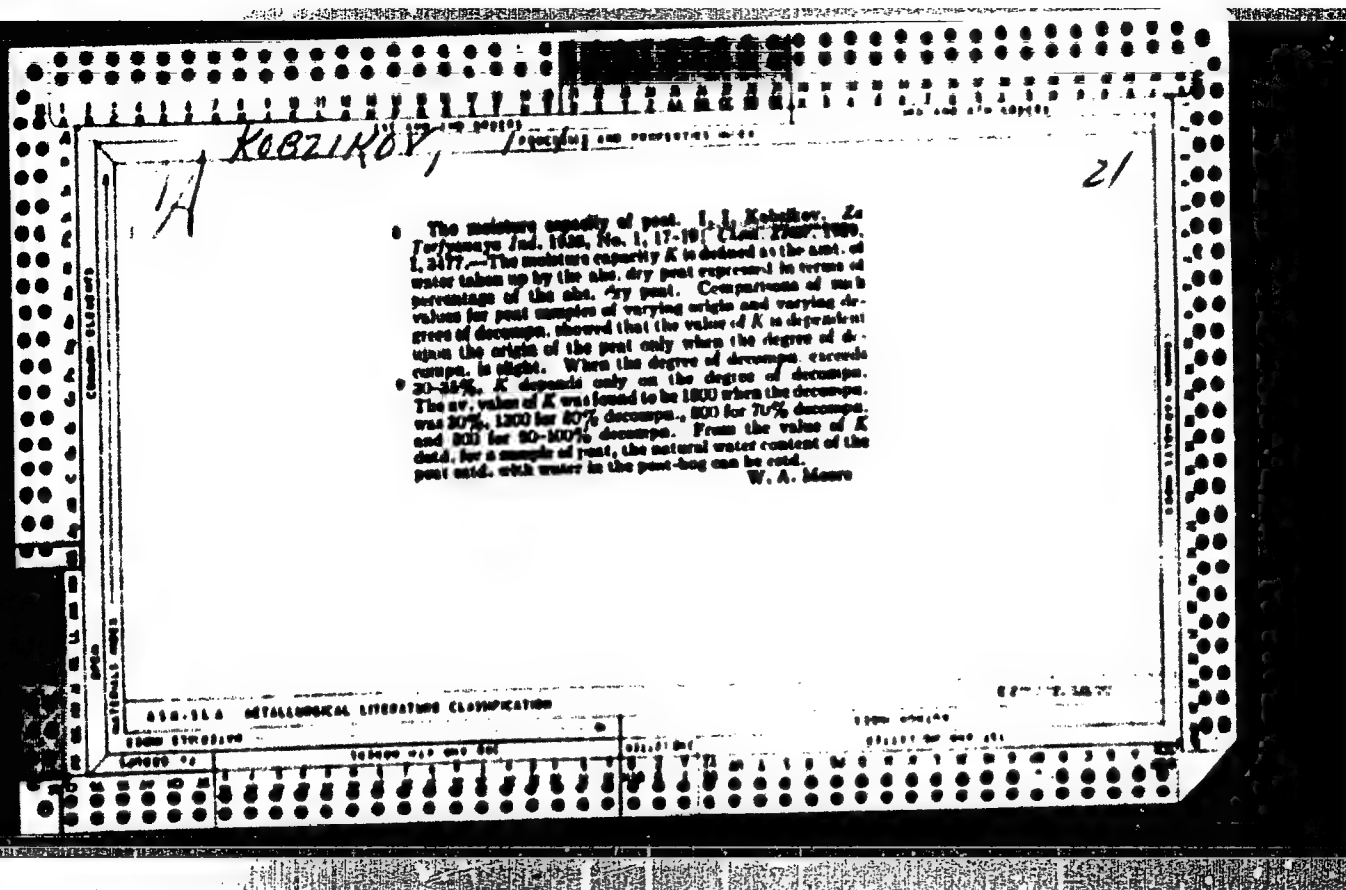
Works on the All-Union Peat Institute, (Min of Agri, RSFSR).

Number 5, 1933, 108 pages, <sup>A Compendium of Instructions</sup>  
~~Sampling~~ on the Study of Peat and Peat Bogs

Part 2. Field Geobotanical Studies:

"Brief Instructions on Determining the Amount of Stumps in Peat Bogs."  
by Kobzikov, and Fedorova, R.

SO: Botanicheskiy Zhurnal, Vol XXV, No 1, pp 100-110,  
Jan-Feb 1950, Russian bimonthly, Moscow/Leningrad (U-5511,  
12 Feb 1954)



KOBZIKOV, I.I.; KUZNETSOV, G.A.

Textbook on agricultural water supply and land improvement work  
for land use institutes and faculties ("Agricultural water supply  
and improvement." A.I.A. Kalabugin, S.I. Murashev. Reviewed by  
I.I. Kobzikov, G.A. Kuznetsov). Oidr. 1 mel. 8 no.9:61-62 8 '56.  
(MLRA 9:10)

(Water supply, Rural) (Kalabugin, A.I.A.) (Murashev, S.I.)

BEYDER, P.Ya.; KOBZIKOV, I..

Basic problems of the development and distribution of enterprises  
of the petroleum industry of the U.S.S.R. Neft. khoz. 40  
no.4:1-6 Ap '62. (MIRA 15:5)

(Petroleum industry)



BOGDANOV, V.M., kand. biol. nauk; GIBSHMAN, M., retsentsent; KOBZIKOVA, Ye.,  
retsentsent; KIVENKO, S., spetsred.; IVANOVA, N.M., red.; KISINA,  
Ye.I., tekhn. red.

[Bacterial starters for the manufacture of milk products] Bakterial'-  
nye sakvaski dlia proizvodstva molochnykh produktov. Moskva, Pishche-  
promisdat, 1956. 55.p. (MIRA 11:7)

(Starters (Dairy products))

KOBZIKOVA, Ye.

BUR'YA, Yu.; VASIL'YEVSKAYA, O.; KOBZIKOVA, Ye.; SMETANNKO, Ye.; SEMATOVA, M.

Sterilization of milk by high-frequency currents, Moloch, prom. 18 no.4;  
27-29 '57. (MLRA 10:4)

(Milk--Sterilisation) (Electric currents) (Conveying machinery)

KOBZIN, A.I. (Leningrad, ul. Soyusa pechatnikov, d.15, kv.58)

~~Planter sponenrosis and plantar fascial vaginae.~~ [with summary in  
English]. Arkh.anat., gist. 1 subr. 35 no.5:89-95 8-0 '58

(MIRA 11:12)

1. Is kafedry anatomii (sav. - prof. A.A. Smirnov) Leningradskogo  
instituta fizicheskoy kul'tury im. P.F. Lesgafta.

(FOOT, anat. & histol.

planter sponenrosis & fascial vaginae (Rus))

BUKIN, Yu.V.; BYKOV, N.M.; VERESHCHAGINA, N.P.; KOBZIN, A.I.; OSHCHENKOV,  
A.G.; SOKOLOV, N.P.

Aleksei Alekseevich Smirnov; on his 65th birthday. Arkh. anat. gist.  
1 embr. 40 no.2:126-127 F '61. (MIRA 14:5)  
(SMIRNOV, ALEKSEI ALEKSEEVICH, 1895-)

KOBZISTYY, YA. A.

Kolkhoz vysokoi kul'tury zemledeliia [A collective farm of high agricultural standards]. Moskva, Gos. izd-vo sel'khoz. lit-ry, [1953]. 214 p.

SO: Monthly List of Russian Accessions, Vol. 6 No. 12 March 1954.

KOBZISTYY, YA.A.

The Committee on Stalin Prizes (of the Council of Ministers USSR) in the fields of science and inventions announces that the following scientific works, popular scientific books, and textbooks have been submitted for competition for Stalin Prizes for the years 1952 and 1953. (Sovetskaya Kultura, Moscow, No. 22-40, 20 Feb - 3 Apr 1954)

<u>Name</u>	<u>Title of Work</u>	<u>Nominated by</u>
<u>Kobzistyy, Ya.A.</u> Pruglo, V.V.	"The Kholkhos With an Advanced Type of Farm- ing"	Ukrainian Scientific Re- search Institute of Grain Agriculture imeni V.V. Kuybyshev

SO: W-30604, 7 July 1954

ROBZISTAYA, L.N.

CP  
Effect of heating the slump on sugar losses. A. A. ~~1953~~  
low and L. N. ~~Robzistaya~~. ~~Trudy Vsesoyuz. Nauch.~~  
~~Izslenuln. Inst. Selkhoz. Prom.~~ 1953, No. 2, 177-81.  
Reford. Zhur. Khim. 1955, No. 1411. An increase in the  
heating temp. from 75 to 85° causes an increase in the  
content of sugar from 0.014-0.09% to 0.050-0.085% of the  
wt. of the initial sugar, an increase in the residue from 0.4-1.0  
to 1.5-1.8% of the original residue of the sugar, and an increase  
in the residual matter from 1.5 to 11.7% of the original  
M. H. ~~1953~~

KOBZOV, S.A.

Disinfecting seed with moistening. Zashch. rast. ot vred. i bol.  
9 no.9:9 '64. (MIRA 17:11)

1. Starshiy agronom po zashchite rasteniy Varnenskogo rayona,  
Chelyabinskoy oblasti.



GOLYSHIN, N.M.; KORGOV, S.A., agronom po zashchite rasteniy (Varnenskiy rayon, Chelovecheskoy oblasti); KAVIGANAS, P. (Kaviganas, P.), agronom po zashchite rasteniy, (Kretingiskiy rayon, Litovskoy SSR).

Leaders' letters. Zashch. rast. ot vred. i bol. 9 no.10:13 '64  
(MIRA 18:1)

1. Zaveduyushchiy laboratoriyey ispytaniya fungitsidov Vsesoyuznogo nauchno-issledovatel'skogo Instituta khimicheskikh sredstv zashchity rasteniy (for Golyshin).

KOBZOVA, R. I. Cand Chem Sci -- (diss) "Higher alcohols of the aliphatic series from <sup>products of the</sup> oxidation ~~products of~~ paraffin waxes." Mos, 1959. 12 pp (Glavniiprojekt under ~~the~~ Gosplan USSR. All-Union Sci Res Inst for <sup>the</sup> Reprocessing of Petroleum and Gas and Production of Synthetic Liquid Fuel "VNIINP"), 150 copies (KL, 45-59, 143)

-12-

5.3400

77043  
SOV/67-4-6-35/37

AUTHORS: Mouskin, P. A., Kobzeva, R. I., Volizar'yeva, N. I., Soskin, M. A., Karzhev, V. I., Raptin, I. B.

TITLE: Higher Aliphatic Alcohols From Solid Paraffin Oxidation Products

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1960, Vol. 4, Nr 6, pp 811-812 (USSR)

ABSTRACT: This is a summary of the article published in Khimiya i tekhnologiya topliv i masel, 1960, Nr 1, pp 24-27. our Abstract 77043.

ASSOCIATION: Scientific Research Institute for the Processing of Petroleum and Gas and for the Production of Synthetic Liquid Fuel (Nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i proizvodstvu tekhnicheskogo zhidkogo topliva)

SUBMITTED: July 13, 1959  
Card 1/1

MOSHKIN, P.A.; KOBZOVA, R.I., kand.khim.nauk

Composition of alcohols obtained from unsaponifiables-II.  
Masl.-shir.prom. 26 No.6:30-33 Je '60. (MIRA 13:6)

1. Chlen-korrespondent AN SSSR (for Moshkin). 2. Vsesoyuznyy  
nauchno-issledovatel'skiy institut po pererabotke nefi i gaza i  
polucheniya iskusstvennogo zhidkogo topliva.  
(Alcohols) (Acids, Fatty)

ACCESSION NR: AP4009784

S/0065/64/000/001/0032/0038

AUTHOR: Onarina, Ye. M.; Tubyanskaya, G. S.; Kobzova, R. I.

TITLE: Polyorganosiloxanes--liquid base of high temperature greases.

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1964, 32-38

TOPIC TAGS: polyorganosiloxane, high temperature grease, polymethylsiloxane, polymethylphenylsiloxane, polyethylsiloxane, polymethylchlorophenylsiloxane, silicone, volatility, lubricity, viscosity temperature function, antiwear property, thermal oxidation stability

ABSTRACT: The physical-chemical properties of polyorganosiloxane liquids were evaluated to determine their suitability as liquid bases for high temperature greases. For operations up to 200C polymethylsiloxanes (PMS-20, PMS-50, PMS-100, PMS-400) are preferable than polyethylsiloxane with respect to physical-chemical, thermooxidative, stability and anti-wear properties, and preferable to polymethylphenylsiloxane with respect to viscosity-temperature and anti-

Card 1/2

APPROVED FOR RELEASE: 09/18/2001

CIA-RDP86-00513R000723420011-

ACCESSION NR: AP4009784

wear properties. For greases to be used above 200C, polymethylphenyl, and polymethylchlorophenylsiloxanes are recommended. The thermal stability of the polyorganosiloxanes improves with an increase in number of phenyl groups. Thus polymethylsiloxane starts to decompose at 250C, while polymethylphenylsiloxane FM-1322/300 with a low phenyl content is stable for 520 hours, and PFMS-4 with a high phenyl content, is stable for 2600 hours. Above 350C none of these siloxanes are sufficiently stable for thermal oxidation. The lubricity of polyorganosiloxanes, especially the abrasion stability, is not particularly satisfactory. In this respect polymethyl- and polymethyl chlorophenyl siloxanes are better than polymethylphenylsiloxane. However none of these should be used under high speed or high load operations. "Determination of lubricity was conducted by V. A. Listov and co-workers." Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: None

SUBMITTED: 00

SUB CODE: FP

DATE ACQ: 10Feb64  
NR REF SOV: 004

ENCL: 00  
OTHER: 010

Card 2/2

SECRET  
REF ID: A66000

"APPROVED FOR RELEASE: 09/18/2001

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Y B I N P

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**APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723420011-1"**

L 2271-66 EWT(a)/EPF(c)/EWP(j)/T RH/DJ

ACCESSION NR: AP5022227

UR/0191/65/000/009/0035/0037

678.84:678.048.9

AUTHOR: Kobzova, R. I.;<sup>44</sup> Levkina, N. K.;<sup>44</sup> Kudryavtsev, A. S.;<sup>44</sup> Savich, I. A.;<sup>44</sup>  
Oparina, Ye. M.;<sup>44</sup> Tubyanskaya, G. S.<sup>44</sup>

TITLE: Effect of some complex compounds<sup>44</sup> on the stability of polydimethylsiloxanes<sup>44</sup>  
to thermal oxidation

SOURCE: Plasticheskiye massy, no. 9, 1965, 35-37

TOPIC TAGS: polydimethylsiloxane, silicone lubricant, antioxidant additive,  
chelate compound, Schiff base

ABSTRACT: The effect of certain complex compounds of copper, cobalt, nickel, lead, and iron with various Schiff bases on the stability of liquid polydimethylsiloxane polymer PMS-100 to thermal oxidation was investigated. All the compounds studied increased the stability of polydimethylsiloxane, the most effective being N,N'-bis(2-hydroxy-1-naphthylidene)-1,2-diaminoethane, which increased the stability by a factor of 9. The effectiveness of the complex compounds depends to a considerable extent on the nature of the metal and choice of the addend. The effect of metal is displayed most clearly in the case of N-(2-hydroxybenzylidene)-2-aminophenol, which forms a very effective stabilizing compound with

Card 1/2

Card 1/2

ACC NR: AP6003434

(A)

SOURCE CODE: UR/0065/66/000/001/0052/0054

AUTHOR: Kobzova, R. I.; Tubyanskaya, G. S.; Oparina, Ye. M.; Levkina, N. K.

68  
B

ORG: VNII NP

SS

TITLE: Stabilization of polyethylsiloxane fluids by additives

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1966, 52-54

TOPIC TAGS: silicone lubricant, thermal ~~stability~~ stability, antioxidant additive

ABSTRACT: The effectiveness of antioxidant additives<sup>1</sup> such as phenyl-1-naphthylamine, Ionol, or dilauryl selenide as oxidation inhibitors for the polyethylsiloxane fluid, lubricant 6 (TUYeU-118-55), has been studied for the purpose of prolonging service life and increasing service temperature of the lubricant. The criterion of thermal-oxidative stability of lubricant specimens with or without additives was gelation time at 200 and 250C. The best results were attained with dilauryl selenide; at 250C addition of 5% of this compound increases the thermal stability<sup>2</sup> of the lubricant by a factor of 25. The effectiveness of the additives tested improves with increasing concentration (5% max) and drops with increasing temperature. In other tests it was found that the same additives do not produce the same effect in individual silicone fluids. For example, oxidation inhibitors of PMS-100 polyethylsiloxane fluid such as cyclopentadienylcarbonylmanganese, selenophene derivatives, or ferrocene

Card 1/2

UDC: 665.521.5:547.28

2

Card 2/2

L 20613-66 INT(m)/T DJ

ACC NR: AP6010830

(A)

SOURCE CODE: UR/0065/66/000/004/0047/0048

52  
P

AUTHOR: Kobzova, R. I.; Tubyanskaya, G. S.; Oparina, Ye. M.; Zaytsev, V. A.; Yegorova, A. A.

ORG: VNIINP

TITLE: TsTM: "a new effective stabilizer for silicone lubricants"

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 4, 1966, 47-48

TOPIC TAGS: lubricant, lubricant additive, silicone lubricant, antioxidant additive

ABSTRACT: A study has been made of the antioxidant effectiveness of cyclopentadienyltricarbonylmanganese (designated TsTM in the source) in silicone lubricants. TsTM was found to surpass existing silicone antioxidants in stabilizing effectiveness and solubility. It is noted that prolonged service of silicone lubricants at 150—200C and above is normally rendered impossible by oxidation and polymerization and that existing antioxidant additives are insufficiently effective. The silicone lubricant used in this study was PMS-100 polydimethylsiloxane fluid (MRTU-6 No. YeU-230-61 specifications). The criterion of antioxidation effectiveness was the gelation time at 250—350C. TsTM was found to be a highly effective stabilizer of the PMS-100 fluid. At 250C the curve TsTM concentration versus effectiveness went through a maximum at 0.5%; at this maximum the gelation time was increased by a factor of 250. The optimum TsTM concentration was dependent on temperature. TsTM

Card 1/2

UDC: 665.521.5:547'28

L 20613-66

ACC NR: AP5010830

was highly soluble (up to 2% at minus 60C) in the PMS-100 fluid—an important advantage. A disadvantage was the unstability of TsTM solutions in PMS-100 on storage in the light; however, in the dark the solutions remained stable and effective for 1 year. Orig. art. has: 1 figure and 1 table. [SM]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 001/ ATD PRESS: 4114

Card 2/2

L 40353-66 SWP(J)/EWT(m)/T IJP(c) RM/AM/DJ

ACC NR: AP6027279

(A)

SOURCE CODE: UR/0191/66/000/008/0031/0032

AUTHOR: Kobzova, R. I.; Oparina, Ye. M.; Lavkina, N. K.

ORG: none

TITLE: Stabilization of polysiloxanes by cerium complexes<sup>1</sup>

SOURCE: Plasticheskiye massy, no. 8, 1966, 31-32

TOPIC TAGS: ~~silicone~~ antioxidant additive, cerium compound, POLYSILOXANE,  
OXIDATION INHIBITOR, THERMAL STABILITY<sup>15</sup>

ABSTRACT: A new, highly effective cerium-complex thermal-oxidation inhibitor has been developed for polysiloxanes. The inhibitor increased the thermal stability (criterion, gelation time) of PMS-100 polydimethylsiloxane fluid by a factor of 250 at 250C and of almost 200 at 300C. The additive was soluble in the polysiloxane and did not precipitate on cooling to minus 60C. The inhibitor was a mixture of cerium p-toluate and N,N'-disalicylidene-1,2-propanediamine (forming a complex) taken in 1/18 molar ratio. It was used in doses equivalent to 0.025, 0.05, and 0.075% Ce in the silicone fluid. To ensure solubility, the silicone fluid was added to a toluene solution of the inhibitor, after which the toluene was stripped off to 275C with sparging of air. It is suggested that under these conditions the inhibitor molecule becomes part of the silicone backbone just as was the case with previously studied titanium chelates. Orig. art. has: 3 tables. [SM]

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 006/ ATD PRESS: 6052  
Card 1/1 UDC: 678.84:678.48.9:546.655-388

L 38217-66 EWT(m)/EWP(j)/T DJ/RM

ACC NR: AP6025463

SOURCE CODE: UR/0080/66/039/007/1638/1641

AUTHOR: Kobzova, R. I.; Oparina, Ye. M.; Levkina, N. K.; Magdesiyeva, N. N.;  
Yur'yev, Yu. K.

52  
51  
8

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet); VNIi NP

TITLE: β-Diketones and azomethines of the selenophene series: oxidation inhibitors for silicone fluids

SOURCE: Zhurnal prikladnoy khimii, v. 39, no. 7, 1638-1641

TOPIC TAGS: antioxidant additive, silicone lubricant, selenophene, selenium compound

ABSTRACT: A study has shown β-diketone and azomethine derivatives of selenophene to be effective thermal-oxidation inhibitors for silicone fluids used as lubricating oils and as dispersion media for lubricating greases. Selenophene derivatives were of interest because compounds containing a selenium atom in a ring are more thermally stable than the conventional antioxidant dilauryl selenide. Nine compounds were tested for antioxidant effectiveness (criterion, gelation time) in various silicone fluids at 300C. For polymethyl(chlorophenyl)siloxane (PMChFS), the most effective antioxidant was (2-selenophenecarbonyl)acetone, and for polymethylsiloxane (PMS-100) and polymethylphenylsiloxane (PM-1322/300), the most effective were N-salicylidene-

Cord 1/2

UDC: 546.3-19:66.022.37



L 38217-66

ACC NR: AP6025463

(2-selenophene-yl)amine and dipicolinoylbis(2-acetylselenophene). With increasing concentration of the antioxidants (0.5 to 5%), their effectiveness increased. Orig. art. has: 1 table. [SM]

SUB CODE: 11/ SUBM DATE: 21Jan65/ ORIG REF: 007/ OTH REF: 001/ ATD PRESS:

5044

Card 2/2 *ell*

ACC NR: AP6035579

SOURCE CODE: UR/0065/66/000/011/0050/0051

AUTHORS: ~~APPROVED FOR RELEASE: 09/18/2001~~ ~~key~~ CIA-RDP86-00513R000723420011-

ORG: VNII NP

TITLE: Molybdenum disulfide and graphite—fillers for polyorganosiloxanes

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 11, 1966, 50-51

TOPIC TAGS: molybdenum disulfide, organosilicon compound, polymethylsiloxane, polymethylphenylsiloxane, graphite / PMS-100 polymethylsiloxane, FM-1322-300 polymethylphenylsiloxane, PMS-4 polymethylphenylsiloxane

ABSTRACT: The effects of adding 1 to 20% of molybdenum disulfide upon the thermo-oxidative stability of organosilicon liquids were investigated. The organosilicon compounds selected for the study were polymethylsiloxane PMS-100, polymethylphenylsiloxane with a small content of phenyl substituent FM-1322/300, and polymethylphenylsiloxane with a high content of phenyl groups PMS-4. The properties of these materials have been described earlier by Ye. M. Oparina, G. S. Tubyanskaya, and R. I. Kobzova (Khim. i tekhnol. topliv i masel, No. 1, 1964). The gelatinization or solidification rate upon heating in open beakers and the loss of weight prior to gelatinization served as indicators of thermooxidative stability. Heating was conducted at 150, 200, and 250C. At concentrations up to 1% the additives enhanced the thermal

Card 1/2

UDC: 621.892.7:66.092

ACC NR: AP6035579

KOBZUNENKO, N.; VINNIK, I.

Case of Aleksei Zarevko. Sov.protselusy 16 no.9:47-48 My '60.  
(MIRA 13:7)

1. Sotrudnik gorodskoy gazety "Dzerzhinets," Dneprodzershinsk  
(for Kobzunenko).
2. Redaktor mnogotirazhnoy gazety "Dneprovskiy  
koksovik," Dneprodzershinsk (for Vinnik).  
(Labor discipline)

KOC, C.

Measurements of the lifetime of a minority carrier in semiconductors  
by means of the Many bridge with a differential amplifier. P 747

SLABOPROUDY OBZOR (Ministerstvo vacobenibo strojirenstvi, Ministerstvo spoju  
a Ceskoslovenska vedecko-technicka spolecnost, sekce elektrotechnika) Praha,  
Czechoslovakia, Vol. 20, no. 12 Dec. 1959

Monthly List of East European Accessions (KEAI), LC. Vol. 9, no. 2,  
Feb. 1960

Uncl.

**"APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723420011-1**

**APPROVED FOR RELEASE: 09/18/2001**

**CIA-RDP86-00513R000723420011-1"**

# CZECH

537 523 5

6643. Discharge in the Leidenfrost layer of mercury vapour. *J. Phys.*, 3, No. 4, 304-8 (1953) *In Russian*

Describes a discharge observed in the Leidenfrost layer of mercury vapour, produced between a submerged red-hot metal anode and a liquid mercury cathode. The discharge burns independently even if the voltage of the source is about 2 V. It was found that with the creation of the Leidenfrost layer the mercury column started to oscillate mechanically, causing a periodic make and break of the contact. Since the voltage is very low no arc can be produced directly, the interruption of the current, however, is

sharp enough as to make the self-induced voltage in the circuit reach values sufficient to support a temporary arc. It was found that this arc had a cathode spot and that its maximum voltage was about 3 V.

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**CIA-RDP86-00513R000723420011-1"**



STANISLAV, ~~ROC~~  
ROC, Stanislaw

2108

✓ The influence of adsorbed molecules on photoelectric emission. Stanislaw P. Czerwik. ? Phys. 6, 45-51 (1958) (in German). The tubes were made on Geiger-Müller tubes with Cu and Ni photocathodes. The tubes were treated with alk. vapor at 500° for 1 hr. and then degassed for 2 hrs. They were filled with A at a partial pressure of 40 mm. Hg and with 10 mm. of MeOH, EtOH, CCl<sub>4</sub>, CHCl<sub>3</sub>, acetone, benzene, or cyclohexane. The count under monochromatic illumination was made under rapidly varying temp. conditions. A slow and a rapid change of emission with a sudden temp. change was observed, and the time const.  $\tau = \tau_0 e^{\frac{E}{kT}}$  of the slow change was found.  $E = 100-1000$  cal./mole. The fast change was also temp. dependent and dependent on the wave length. The rapid changes of emission were attributed to changes in the quantity of mole. adsorbed at the surface. The slow changes were observed predominantly on Q-emitting substances, and they are therefore attributed to chemisorption of O at the surface. S. PATEREK.

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**CIA-RDP86-00513R000723420011-1"**

CZECHOSLOVAKIA/Physical Chemistry. Kinetics. Combustion.  
Explosions. Topochemistry. Catalysis.

B-9

Abs Jour: Ref Zhur-Khin., No 13, 1958, 42624.

Author : Koc Stanislav, Roubinek Frantisek.

Inst :                     

Title : The Influence of the Gradient of External Electric  
Field on Chemo-Emission.

Orig Pub: Chekhosl. fiz. zh., 1957, 7, No 2, 213-217; Ceskosl.  
casop. fys., 1957, 7, No 1, 42-45.

Abstract: A study of the effect of intensity  $E$  of external  
electric field (15-900 v/cm) on chemo-emission of  
electrons that is observed on interaction of me-  
tallic Cu with gaseous  $O_2$  at 20-200°. As in the  
case of normal thermo-electronic emission of metals  
the logarithm of thermocurrent  $i$  is proportional to

APPROVED FOR RELEASE: 09/18/2001 CIA-RDP86-00513R000723420011-1

Card : 1/2

19

*NOC,*  
CZECHOSLOVAKIA/Electricity - Semiconductors

Abs Jour : Ref Zhur - Fizika, No 4, 1958, No 8606

Author : Koc Stanislav

Inst : Institute for Technical Physics, Czechoslovak Academy of  
Sciences, Prague.

Title : Instrument for Measuring the Lifetime of Excess Carriers

Orig Pub : Ceskosl. casop. fys., 1957, 7, No 3, 288-293

Abstract : The principle of the instrument for the measurement of the  
lifetime consists of applying to a semiconductor diode rectan-  
gular current pulses and observing the change in their wave-  
form. At the beginning of the pulse, the concentration is  
at equilibrium, and the resistance and consequently also the  
voltage, is a maximum. Then the number of current carriers  
increases, the resistance diminishes, and the voltage with it.  
If the next pulse follows within a time interval less than the  
lifetime of the carriers, then its maximum voltage will be  
less than the initial one. From the time interval within which  
the initial voltage amplitude is established, it is possible

KOC, Stanislav, Kandid. ved. mat.-fys.

Measuring the lifetime of minority current carriers in semiconductors by the phase method. Slaboproudy obzor 21 no.2:  
103-106 '60. (KRAI 9:6)

1. Ústav techniky fyziky. Československé akademie věd. Praha.  
(Semiconductors)

88738

9.4300 (and 1043, 1143) Z/037/61/000/001/005/007  
E073/E335

AUTHOR: Koc, Stanislav

TITLE: Surface Phenomena on Germanium

PERIODICAL: Československý časopis pro fysiku, 1961,  
No. 1, pp. 39 - 61

TEXT: Review paper on the properties of surface layers of Germanium. The paper by R.H. Kingston (JAP 27, 1956, 1061-Ref.10) summarises information published up to 1955 concerning surface phenomena on germanium. A later paper by E.O. Johnson (RCA Rev. 18, 1957, 525 - Ref. 93) was, to a limited extent, a continuation of the paper by Kingston and information on later developments is also contained in the book of R.H. Kingston "Semiconductor Surface Physics", Philadelphia, 1957. Surface properties of semiconductors are also dealt with in the following two papers: H.J. Engel "Halbleiter probleme. I.", W. Schottky, Braunschweig 1954, 249 - Ref. 50; H.U. Harten, W. Schultz "Halbleiterprobleme. III", W. Schottky, Braunschweig, 1956, 76. - Ref. 85. The opening addresses and closing speeches of some conferences and short papers (Brattain, W.H. J. Phys.Chem.

Card 1/5

88738

Z/037/61/000/001/005/007  
E073/E335

Surface Phenomena on Germanium

Solids 8, 1959, 541 - Ref. 20; Brattain, W.H. Science 126, 1957, 151 - Ref. 21; Many, A. J. Phys. Chem. Solids 8, 1959, 87 - Ref. 148; de Mars, G. Semicond. Products 2, 1959, No. 2, 24 - Ref. 153; Schultz, W. and Harten, H.U. Zs. f. Elektrochemie 60, 1956, 20 - Ref. 210 and the introductory paper to the collection of translations into Russian on "Physics of the Surface of Semiconductors" edited by G. Ye. Pikus, Moscow, 1959) also contain a brief outline of the present views on surface phenomena. The present state and trends emerge from the papers presented at the Second Conference on the Surface of Semiconductors, held in December, 1959, at White Oak. Russian translations of foreign literature in this field are significant. A collection of translations "Electrophysical Properties of Germanium and Silicon, edited by A.V. Rzhanov, ISR, Moscow, 1956 (Ref. 196) contains only a few translated papers from the field of surface phenomena. However, in the collection of Russian translations

Card 2/3

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E073/E335

**Surface Phenomena on Germanium**

"Problems of Semiconductor Physics" edited by Bonch-Bruyevich, Moscow, 1957 (Ref. 197), a third of the space is devoted to surface phenomena and the collection "Physics of the Surface of Semiconductors", edited by G.Ye. Pikus and published in 1959 (Ref. 198) is entirely devoted to surface phenomena. Very little attention has been paid to this problem in Czechoslovakia and it is characteristic that the book "Crystal Electron Tubes" by H. Frank and V. Šnejdar (Ref. 59) devotes a total of only four-and-a-half pages to this subject. The number of papers published on this subject during the last three years has increased very considerably and for facilitating study of the problem the author gives a detailed review of the present state of this field and an exhaustive bibliography. The aim of the review is to acquaint the reader with the properties of the germanium surface and to elucidate the basis of their physical interpretation. The bibliography contains references to work on the problem or on associated problems published during the last five years. Some of the concrete

Card 3/5

88738

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E073/E335

#### Surface Phenomena on Germanium

experimental results which have not been adequately covered have been dealt with in an earlier paper by G. Dorda (Ref. 45). Sorption properties of germanium surfaces are dealt with only very briefly. Equally, the relations between the surface properties of germanium and the properties of semiconductor components are not dealt with.

After a very brief review of the properties of the surface space-charge layer, the author touches upon questions of contact potential, surface conductivity, field-effect mobility, fast surface states and surface recombination, slow surface states,  $1/f$  noise and simple experimental methods. None of the above mentioned subjects are treated in any detail.

Card 4/5

88738

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E073/E335

**Surface Phenomena on Germanium**

There are 5 figures, 2 tables and 255 references: 53 Czech and 202 non-Czech.

**ASSOCIATION:** Ústav technické fyziky ČSAV, Praha  
(Institute of Technical Physics, ČSAV, Prague)

**SUBMITTED:** March 18, 1960

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Card 5/5



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Z/039/61/022/001/004/006  
E192/E382

9.4310 (and 1003, 1143, 1160)

AUTHOR: Koc, Stanislav, Candidate of Sciences

TITLE: Correlation Between the Surface Phenomena in Semiconductors and the Characteristics of Diodes and Transistors

PERIODICAL: Slaboproudý obzor, 1961, Vol. 22, No. 1, pp. 25 - 30

TEXT: The article is a review dealing with homeopolar semiconductors, in particular, germanium and silicon. It is well known that the actual surface of a germanium device is always coated with a layer of the adsorbed molecules, atoms or ions of the surrounding medium, which became attached to the surface during the various stages in the manufacture of the diodes. An exchange of charges takes place between these particles and the semiconductor and this results in a space charge on the surface of Ge. The compensation of this surface charge results in the appearance of an opposite charge in the region just below the surface. This leads to changes in the concentration of free carriers in the region near the

Card 1/4

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# Correlation Between the Surface Phenomena in Semiconductors and the Characteristics of Diodes and Transistors

surface; this region is referred to as the "space-charge region". The concentration of the current carriers in the bulk of a semiconductor is characterised by a volume potential  $\varphi_B$ , whose zero level falls to the centre of the forbidden energy band between the conductance and the valency bands. Another characteristic parameter for describing the surface region is the surface potential  $\varphi_s$ . As the concentration of free carriers at the surface changes, the conductivity of this region also varies. The transition from the potential  $\varphi_B$  inside the semiconductor to the value  $\varphi_s$  on the surface can be arbitrary and the depth of the surface region is dependent on the volume properties of the semiconductor. The surface charge can be so large that the concentration of the minority carriers increases at the surface to such an extent that it exceeds the concentration of the original majority carriers. In this way,

Card 2/4

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Z/039/61/022/001/004/006  
E192/E382

**Correlation Between the Surface Phenomena in Semiconductors and the Characteristics of Diodes and Transistors**

the rôle of the carriers at the surface is reversed and the semiconductor changes its conductivity type on the surface. Such a surface layer is referred to as the inversion layer. By studying the surface conductivity it is possible to determine the induced electric charge in the region of the space charge. It is found that a portion of the charge does not contribute to the conductivity. This is due to some of the surface states being localised so that their relaxation time is very short (of the order of 1 ns). Apart from that, there exist on the surface certain trapping levels having long relaxation times (of the order of secs or days). The effect of the surface space charge on the following characteristics of semiconductor devices is discussed in some detail: reduction of the overall photoelectric sensitivity and change in the photoelectric spectral sensitivity; inverse breakdown voltage; direct breakdown in diodes and modulated breakdown; multiplication of photoelectric signals; diffusion and

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Card 3/4

87981

Z/039/61/022/001/004/006  
E192/E382

**Correlation Between the Surface Phenomena in Semiconductors and the Characteristics of Diodes and Transistors**

recombination in the reverse direction; surface ionic current; hole current; long-term phenomena (creep); junction capacitance; noise and current amplification factor. It is pointed out that the undesirable influence of the surface phenomena can, to some extent, be eliminated by a suitable treatment of the surface (etching and cleaning), choice of an optimum surrounding medium and protection of the surface by a suitable coating and encapsulation. There are 8 figures and 78 references: 1 Czech and 77 non-Czech.

**ASSOCIATION:** Ústav technické fyziky ČSAV, Praha (Institute of Technical Physics, ČSAV, Prague)

**SUBMITTED:** August 3, 1960

Card 4/4

KOC, St.

International Summer School of E. Fermi in Varenna; semiconductor  
courses 1961. Cs cas fys 12 no. 2:196-199 '62.

1. Ustav fyziky pevných látek, Československá akademie věd, Praha.

KOC, Stanislav (Praha)

Microminiaturization. Pokroky mat fyz astr 8 no.6:332-337 '63.

KOC, S.

Unreal accumulation effect during AC field effect on Co.  
Chekhosl fiz shurnal 13 no.10:781-782 '63.

1. Ustav fyziky pevných látek, Československá akademie věd,  
Praha.

KOC, Stanislav, CSs.

New possibilities of increasing the stability of semiconductor parts.  
Slaboproudý obsač 24 no.9:553-554 8 '63.



KOC, Stanislav (Praha)

Indirect effect of the ionizing radiation on semiconductors.  
Pokroky mat fys astr 9 no.1:14-17 '64.

L 31100-66 EMP(6)/ET1 1JP(e) JD

ACC NR: AP6022775

SOURCE CODE: CZ/0039/66/027/002/0071/0074

AUTHOR: Koo, Stanislav (Candidate of sciences) 86

ORG: Institute of Solid State Physics, CSAV, Prague (Ustav fyziky pevných látek CSAV)

TITLE: Surface breakdown of Ge and Si devices

SOURCE: Slaboproudy obsor, v. 27, no. 2, 1966, 71-74

TOPIC TAGS: silicon semiconductor, germanium semiconductor, semiconductor research

ABSTRACT: The article surveys contemporary views about junction breakdown in the vicinity of the surface. It shows the possibility of describing this phenomenon in a unified way without regard to whether it was adsorption, an external field, slow states or geometry which caused change of the properties of the semiconductor near the surface. Orig. art. has: 4 figures and 2 formulas. [JPRS]

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OTH REF: 014

Cord 1/2 92

UDC: 621.314.7.012

84 15

07 45

L 42249-66 ENP(t)/ETI IJP(c) JD

ACC NR: AP6031556

SOURCE CODE: CZ/0039/65/026/009/0530/0533

AUTHOR: Koc, Stanislav (Candidate of sciences)

ORG: Institute of Solid State Physics, CSAV, Prague (Ustav fyziky pevných látek CSAV)

TITLE: Trapping levels in oxide layers on germanium <sup>27</sup>

SOURCE: Slaboproudý obzor, v. 26, no. 9, 1965, 530-535

TOPIC TAGS: germanium semiconductor, physical diffusion, electric field

ABSTRACT: The article deals with the physical phenomena occurring in the oxide layer on the surface of germanium and capable of influencing the qualities of semiconductor devices in practice. Charge transport in the oxide is controlled by diffusion in weak electrical fields, whereas in strong electrical fields a fast transmission of charges occurs between the oxide and semiconductor under certain circumstances. This has been explained by the so-called inner emission by the electrical field. The possibility of determining important parameters of the trapping levels within the oxide was derived by measuring that phenomenon. Orig. art. has: 10 figures and 6 formulas. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 09, 20 / SUBM DATE: 16Feb65 / ORIG REF: 006 / OTH REF: 011

Card 1/1 *tdh*

UDC: 537.511.33.09 *8479 03-11*

**LENGER, Vladimir, J.; KOCA, Ladislav**

**New type of an electroprecipitator. Pracevní lek. 6 no.6:354  
15 Nov 54.**

- 1. Ustav higieny prace a choreb s povelani - Praha.  
(APPARATUS AND INSTRUMENTS  
electric precipitator)**